

AMENDMENTS

Claim amendments:

1. (Currently Amended) A method for forming a metal oxide semiconductor field effect transistor (MOSFET), comprising:

providing a substrate comprising a layer of silicon germanium grown on an underlying silicon layer;

forming trenches in the silicon germanium layer to define an active region of the MOSFET;

forming an oxide liner in the trenches;

forming a layer of silicon carbide over the substrate to fill the trenches;

planarizing the silicon carbide to form isolations in the trenches; and

~~forming isolations in the trenches, the isolations comprising a high thermal conductivity insulating material; and~~

forming a MOSFET on the substrate in the active region, the MOSFET comprising a layer of strained silicon formed on the silicon germanium in the active region.

2. (Currently Amended) The method claimed in claim 1, wherein the trenches formed in the silicon germanium layer exposes the underlying silicon layer and the isolations contact the silicon layer.

3. (Currently Amended) The method claimed in claim 1, wherein the isolations comprise an oxide liner is formed on sidewalls of the trenches and wherein the silicon carbide high thermal conductivity insulating material of the isolations contacts the silicon layer.

Claims 4 - 7 (Canceled)

8. (Original) The method claimed in claim 1, wherein a strained silicon layer is formed on the silicon germanium layer prior to forming the trenches, and

wherein the trenches are formed in the strained silicon layer and the silicon germanium layer.

9. (Original) The method claimed in claim 1, wherein forming the MOSFET comprises:

forming a gate insulating layer on the strained silicon layer;

forming a gate conductive layer on the gate insulating layer; and

patterning the gate conductive layer to form a gate overlying a gate insulator.

10. (Original) The method claimed in claim 9, wherein forming the MOSFET further comprises:

forming a first spacer around the gate; and

implanting shallow source and drain extensions.

11. (Original) The method claimed in claim 10, wherein forming the MOSFET further comprises:

forming a second spacer around the first spacer; and

implanting deep source and drain regions,

wherein the second spacer serves as an implantation mask during implanting of the deep source and drain regions.

12. (Original) The method claimed in claim 11, wherein forming the MOSFET further comprises:

forming nickel silicide source and drain contacts and a nickel silicide gate contact.

13. (Original) The method claimed in claim 1, wherein the silicon germanium layer has a composition $Si_{1-x}Ge_x$, where x is in the range of 0.1 to 0.3.

Claims 14-20 (Canceled)